

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

What is claimed is:

1. A cathode ray tube comprising:
 - a panel having phosphor screen formed on the inner surface thereof;
 - a funnel joined to the panel and having a body portion, a yoke portion and a neck portion; and an electron gun mounted to the neck portion of said funnel;
 - 5 wherein a projection is provided between a seal line plane and the neck portion of the funnel.
2. The cathode ray tube of claim 1, wherein
 - 10 said projection is provided a sealing portion of the body portion and the yoke portion of said funnel together.
3. The cathode ray tube of claim 2, wherein
 - 15 a maximum thickness T_{max} and a minimum thickness T_{min} of a cross section of said projection satisfies:
$$1.5 \leq T_{max}/T_{min} \leq 4.0.$$
4. The cathode ray tube of claim 2, wherein
 - 20 a thickness of said projection is greater than a thickness of the body portion of the funnel.
5. The cathode ray tube of claim 4, wherein
 - both sides of said projection at the outer surface of said funnel have stairs.
6. The cathode ray tube of claim 4, wherein
 - 25 both sides of said projection at the outer surface of said funnel have curvature.
7. The cathode ray tube of claim 1, wherein

a thickness of said funnel except the projection becomes gradually greater from the neck portion to the seal line plane.

8. The cathode ray tube of claim 1, wherein
said panel and said funnel satisfy:

5 $USD/PT \geq 2.5$

wherein USD is a diagonal length of an effective screen of the panel, and PT is a distance between a central point of an inner surface of said panel and the yoke line plane.

10 9. The cathode ray tube of claim 8, wherein
a deflection angle of the electron beams is no less than or equal to 100°.

11 10. The cathode ray tube of claim 8, wherein
a cross section of the neck portion is shaped non circular.

12 11. The cathode ray tube of claim 9, wherein
a cross section of the neck portion is shaped non circular.

15 12. The cathode ray tube of claim 1, wherein
a deflecting angle of the electron beams is no less than or equal to
100°.

16 13. The cathode ray tube of claim 12, wherein
a cross section of the neck portion is shaped non circular.

20 14. The cathode ray tube of claim 1, wherein
a cross section of the neck portion is shaped non circular.

15 15. The cathode ray tube of claim 1, wherein
said funnel satisfies:
 $Tt/Ts \geq 0.9$, $Tt/Tn \geq 1.0$, $Tt \geq 0.7\text{mm}$

Our ref. No. PO2003-46-LGPD/US

wherein A is a plane which is 30mm apart from yoke line plane to neck portion, B is a plane which is 40mm apart from the yoke line plane to the screen, and

Tn is a thickness of said funnel at a position between A and the yoke line plane, Tt is thickness of said funnel at the B, and Ts is a thickness of said funnel at a position between the yoke line plane and the B.